

Appln. No. 10/646,162
Amendment dated February 27, 2006
Reply to Office Action mailed November 29, 2005

REMARKS

Reconsideration is respectfully requested.

Claims 1 through 6 and 8 through 9 remain in this application. Claims 7, 8, and 10 through 13 have been cancelled. No claims have been withdrawn. Claims 14 and 15 have been added.

Paragraphs 1 through 4 of the Office Action

Claims 1, 2, 5, 6, 8 through 10, and 12 have been rejected under 35 U.S.C. Section 102(b) as being anticipated by the Fantom Orb Disk Drive publication (hereinafter the Fantom publication).

Claims 4, 11 and 13 have been rejected under 35 U.S.C. Section 103(a) as being unpatentable over the Fantom publication.

Claim 1 requires, in part, "wherein the activity indicator *is interrupted from continuously indicating the presence of the first continuous operating condition by the activity signal*, thereby producing an indication of the second periodic operating condition". Similarly, but not identically, claim 5 requires "wherein the indicator is configured *to be interrupted from illuminating in response to the presence of the first continuous operating condition by the activity signal* to thereby produce an indication of the second periodic operating condition comprising intervals when the indicator is interrupted from illuminating in response to the presence of the first continuous operating condition". Also, claim 9 requires "wherein the activity indicator *is interrupted from continuously indicating the presence of the power-on operating condition of the electronic device by the activity signal* to thereby produce an indication of the intermittent operating condition of the storage device". (All emphasis added.)

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In the rejection of the independent claims 1, 5, and 9 based upon the Fantom publication, it is asserted in the Office Action that:

The claimed activity indicator is interrupted from continuously indicating the presence of the first continuous operating condition by the activity signal thereby producing an indication of the second periodic operating condition is met by the flashing amber light to indicate that the disk is loading or in use which would interrupt the constant green light (During Operation section).

However, it is submitted that there is no disclosure in the Fantom publication that there is any *interruption* of the illumination of the "green" LED during the data read/write operations, or the illumination of the "amber" LED, and it is submitted that the green LED may remain illuminated while the amber LED is "flashing". Due to the vagueness of the discussion in the Fantom publication, one of ordinary skill in the art can only speculate as to what is the status of the green LED when the amber LED is flashing, and it appears that any "activity signal" is not sent to green LED, but to the amber LED to illuminate it.

Further, it is noted that by use of more than one LED in the device described in the Fantom publication leads one of ordinary skill in the art away from the structure and benefits of the claimed invention in that it is possible to use a single LED, and a single color LED, rather than multiple LEDs with multiple colors as employed in the Fantom device. The claimed invention presents significant economic advantages over the Fantom device.

It is therefore submitted that the Fantom publication would not lead one of ordinary skill in the art to the applicant's claimed invention as defined in claims 1, 5 and 9, especially with the requirements set forth above, and therefore it is submitted that claims 1, 5, and 9 are allowable over the Fantom publication.

Withdrawal of the §102(b) and §103(a) rejections of claims 1 through 13 is therefore respectfully requested.

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Paragraph 5 of the Office Action

Claims 1 through 7 and 9 through 11 have been rejected under 35 U.S.C. Section 103(a) as being unpatentable over Bush et al. (Bush; US Patent 5,214,762).

Initially, it is noted that the rejection of claims 1 through 13 based upon the Bush patent was contested in the Request for Appeal Conference that was filed in this patent application, and that prosecution was reopened and this rejection based upon the Bush patent has been maintained, albeit for claims 1 through 7 and 9 through 11, and not for claims 8 and 12 through 13. The previous remarks contesting the rejection of the claims based upon the Bust patent are reproduced below for completeness.

In the current Office Action, it is stated that:

Regarding arguments A, B, D and F. claim 1 states "the activity indicator configured to provide a continuous indication of the presence of a first continuous operating condition associated with the electronic device" which is clearly met by the system of Bush. The lack of indication as set forth by Bush is still a form of indication to the user that a continuous operating condition associated with the electronic device is occurring, specifically that currently no I/O writes are being performed by the computer (electronic device) on the hard drive (component of the electronic device). There is no mention in the claim language of claim 1 of a limitation to provide indication of a power on or power off condition.

While the language of claim 1 does not literally require "power on" or "power off", claim 1 does require a "first continuous *operating* condition", and not just a "first continuous condition". Therefore, the language of claim 1 requires that the first condition be an *operating* condition as well as a continuous condition, and not simply a condition, such as "power on" or "power off". Thus, it is submitted that the interpretation proposed in the Office Action simply ignores the presence of the "operating" requirement, and the line of argument in the Office Action renders this term meaningless in the claim as it is based upon an "inoperable" or non-operable (or power

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off") satisfying the "first continuous *operating condition*" requirement of claim 1.

Furthermore, the assertion that the "lack of indication as set forth by Bush is till a form of indication", apart from the inherent incongruity in this statement, has been addressed previously by establishing that the "lack of indication" by the indicator in the Bush system does not provide the user with any reliable information as to the condition of the system, as the "lack of indication" *could* mean that:

1) the disk drive of the Bush is not active at the present time,
but the system is in a power on state; OR

2) the entire Bush system is not in a power on state.

Thus, the user must speculate which of these possibilities is actually occurring. Further, neither of these possibilities represents a "continuous operating condition" of an electronic device, as compared to a component of the electronic device, as set forth in claim 1. Thus, not only does the "lack of indication" *not* provide the user with an indication of a single condition that is definite, it also does not address a continuous operating condition of the electronic device, but only component of the device.

Moreover, the statement in the Office Action that "[t]here is no mention in the claim language of claim 1 of a limitation to provide indication of a power on or power off condition." is clearly not accurate with respect to claim 9, which requires "an activity indicator on the electronic device, the activity indicator being configured to *provide a continuous indication of the presence of a power-on operating condition of the electronic device*" and "wherein the activity indicator is *interrupted from continuously indicating the presence of the power-on operating condition of the electronic device* by the activity signal to thereby produce an indication of the intermittent operating condition of the storage device".

Secondly, in the Office Action it is stated that:

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Regarding argument C. again there is no mention in the claim language of claim 1 of a limitation to provide indication of a power on or power off condition. The indications of the disclosed invention and claimed invention both correspond to the same events; the activation and non-activation of an electronic device such as a hard disk drive. The choice of indications themselves, whether they are continuously on and interrupted on activation or continuously off and turned on during activation perform the same functionality and indication to the user. Therefore it would have been obvious to one of ordinary skill in the art to have chosen either of the above mentioned indication choices.

Again, this line of argument appears to overlook the requirements of claim 1 which regards "An alternate indicator for *a component of an electronic device*" and requires "the activity indicator configured to provide a continuous indication of the presence of *a first continuous operating condition associated with the electronic device*" and "the activity detection circuit configured to generate an activity signal when detecting *a second periodic operating condition associated with the component*" (all emphasis added). The line of argument in the Office Action appears to ignore the distinction set forth in the language of the claim between the electronic device and the component of the electronic device, and the corresponding first continuous²⁰operating condition of the electronic device and the second periodic operating condition of the component.

Furthermore, because of the indefiniteness of what the indicator of the Bush system is "indicating" when the indicator is extinguished, as noted above, between the disk drive being inactive and the system being off, it is submitted that the claimed invention and the indicator described in the Bush system do not have the "same functionality" as asserted in the Office Action. Moreover, the Bush system additionally requires the use of a conventional system power on/power off indicator in order to be able to convey the same information conveyed by the indicator of the claimed invention, which further shows that the indicator of the Bush system does not have the "same functionality" of the claimed invention.

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Turning to the rejections set forth in the Office Action, it is first noted that claim 1 requires, in part, "the activity indicator configured to provide a continuous indication of the presence of *a first continuous operating condition associated with the electronic device*", "the activity detection circuit configured to generate an activity signal when detecting a *second periodic operating condition associated with the component*", and "wherein the activity indicator is interrupted from continuously indicating the presence of the first continuous operating condition by the activity signal, thereby producing an indication of the second periodic operating condition".

Similarly, but not identically, claim 9 defines an "alternate indicator for a storage device of an electronic device" and requires, in part, "the activity indicator being configured to provide a continuous indication of the presence of a power-on operating condition of the electronic device" and "wherein the activity indicator is interrupted from continuously indicating the presence of the power-on operating condition of the electronic device by the activity signal to thereby produce an indication of the intermittent operating condition of the storage device". Although the rejection of claim 9 in the Office Action states that claim 9 "is interpreted and rejected as claim 1 stated above", it is submitted that the differences in language between claims 1 and 9 make it improper to interpret these claims in an identical manner as was done in the Office Action.

Turning to the rejections of the Office Action, the Bush patent discusses a disk drive activity indicator in which an LED is turned on *only* when disk drive activity is detected.

In particular, claim 1 recites "a continuous indication of the presence of *a first continuous operating condition associated with the electronic*

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device". In the rejection of claim 1 in the Office Action, it is stated that (emphasis added):

The claimed activity indicator configured to provide a continuous indication of the presence of a first continuous operating condition associated with the electronic device is met by the LED being triggered in response to I/O operations involving the hard drive (abstract) and therefore by definition the LED is not triggered (turned off) during the period when the computer is on but there is no activity involving the hard drive. Therefore the LED is continually indicating that there is no activity in the hard drive while it is off;

It appears that the rejection is based upon the position that a *lack* of activity by the disk drive is a "continuous operating condition", and thus the absence of any indication from the disk drive activity indicator of Bush is actually a "continuous indication" of that continuous *lack* of activity by the disk drive. However, it is submitted that the *non*-operation of the disk drive, which is what leads to the disk drive indicator of Bush remaining turned off, is not considered by one of ordinary skill in the art to be a "continuous *operating* condition" as required by claim 1.

Contrary to the allegation in the Office Action that "the LED is not triggered (turned off) during the period when the computer is on but there is no activity involving the hard drive", a user of the Bush system, viewing the LED of the disk drive activity indicator, does not know if the LED is "turned off" because there is presently no disk drive activity, or is "turned off" because the entire computer system is simply "turned off". Absent the presence of some disk drive activity, the Bush indicator is not only "turned off" when there is no disk drive activity, but is also "turned off" when the computer is "turned off". Thus, unless there is currently some disk drive activity actually occurring, one has no idea from the Bush indicator whether the computer is "on" or "off".

Claim 1 also requires "the activity detection circuit configured to generate an activity signal when detecting a second periodic operating condition *associated with the component*". In contrast to this requirement,

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the positions set forth in the Office Action do not appear to recognize any difference between "a first continuous operating condition *associated with the electronic device*" and "a second periodic operating condition *associated with the component*". The positions taken in the Office Action appear to all relate to the operating states of the disk drive of Bush, such as in the portion of the Office Action where it is stated that (emphasis added):

The claimed activity indicator being interrupted from continuously indicating the presence of the first continuous operating condition by the activity signal, thereby producing an indication of the second periodic operating signal is met by the LED being triggered (turning on) when the triggering logic detects an I/O function relating to the hard drive (abstract).

It is submitted that the Bush patent would not lead one of ordinary skill in the art to consideration of operating conditions of both "an electronic device" and "a component of the electronic device", as required by claim 1, and the rejection of the office Action appears to reflect this, as only the operating states of the disk drive (and not the operating condition of the entire Bush computer system) are discussed. But, as noted above, the user of the Bush system is not provided with any information as to whether the computers system is turned on or turned off, unless, and only when, disk drive activity is actually occurring.

In particular, it is submitted that the disk drive activity indicator system taught by Bush, and its manner of indicating disk drive activity, is completely incapable of providing an effective indication of the "power on" or "power off" status of the Bush system, as the disk drive activity indicator only illuminates during the time that disk drive accesses or interrupts are actually occurring. More significantly, Bush discloses that the disk drive activity indicator is "off" during times that specific disk activity is not occurring, but would also be "off" when the Bush system is powered down (and thus there is no disk activity because the power to the system is cut off). As a result, a user of the Bush system would not be able to look at its disk drive activity indicator and be able to tell if the system is powered up,

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unless disk activity happened to coincide with the precise time that the user looked at the disk drive activity indicator. In contrast, with the system of claim 1, one simply has to look to the claimed indicator to see if power is being supplied to the system, and if the indicator is periodically being interrupted (such as by flashing off), one also knows that disk activity is occurring.

If the prior art does not motivate the modification of the prior art structure to achieve the claimed structure, and there is a benefit that is associated with the claimed structure over the prior art structure, the claimed structure cannot be dismissed as "merely a design choice". As noted above, and in the specification of the present patent application, there is a clear benefit to having a single indicator that provides an indication of the operating conditions of two elements. Further, it was not alleged in the Office Action that the Bush patent, or the prior art, provides one of ordinary skill in the art with any motivation to modify the Bush system to meet the requirements of claim 1, or claim 5. It is submitted that one of ordinary skill in the art, considering the Bush patent and the knowledge that heretofore power indicators and disk activity indicators are separate elements, would presume that the Bush system employs a separate power on indicator, and thus any attempt to further modify the Bush disk drive activity indicator to also indicate the power status of the system would be superfluous.

It is therefore submitted that the Bush patent would not lead one of ordinary skill in the art to the applicant's claimed invention as defined in claims 1 and 5, especially with the requirements set forth above, and therefore it is submitted that claim 1 is allowable over the prior art. Further, claims 2 through 4, which depend from claim 1, and claims 6 through 7, which depend from claim 5, also include the requirements discussed above and therefore are also submitted to be in condition for allowance.

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With respect to the requirements of claim 9, it is submitted that the distinction between the claimed invention and the Bush system is even clearer. Clearly, the indicator in the Bush patent does not provide "a continuous indication of the presence of a power-on operating condition of the electronic device", as the Bush indicator only illuminates when the disk drive activity is detected, which is clearly not a "continuous indication" and does not continuously indicate "the presence of a *power-on* operating condition". Further, the Bush indicator is not "interrupted from continuously indicating the presence of the power-on operating condition . . . to thereby produce an indication of the intermittent operating condition of the storage device". Clearly, the Bush indicator is not interrupted from a continuous illumination condition to indicate an intermittent operating condition, as the Bush patent shows a completely contrary situation in which the indicator is illuminated during the detection of drive activity, and not an interruption of its illumination during times of drive activity. This contrary teaching could not lead one of ordinary skill in the art to the requirements of claim 9. Therefore claim 9, as well as claims 10 through 13 which depend from claim 9, are submitted to be in condition for allowance.

Withdrawal of the §103(a) rejection of claims 1 through 7 and 9 through 11 is therefore respectfully requested.

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CONCLUSION

In light of the foregoing amendments and remarks, early reconsideration and allowance of this application are most courteously solicited.

Respectfully submitted,

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